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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/760,078	01/15/2004	Brian Craig Lee	10019978-4	1899

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HEWLETT-PACKARD COMAPNY  
Intellectual Property Administration  
P. O. Box 272400  
Fort Collins, CO 80527-2400

EXAMINER

TADESSE, YEWEBDAR T

ART UNIT	PAPER NUMBER
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1734

DATE MAILED: 11/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/760,078

Applicant(s)

LEE ET AL.

Examiner

Yewebdar T. Tadesse

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,6-21,24-32,34 and 37-44 is/are pending in the application.
- 4a) Of the above claim(s) 44 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,6-21,24-32,34 and 37-43 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>01/04 &amp; 07/06</u> . | 6) <input type="checkbox"/> Other: ____.  |

**DETAILED ACTION**

***Election/Restrictions***

1. Upon examination the examiner has found that the Election/Restrictions sent on 09/26/2006 is improper. Rewritten restrictions/election requirement of the application as follow:

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1, 6-21, 24-32, 34 and 37-43, drawn to a fluid ejection cartridge, classified in class 118, subclass 300.
- II. Claim 44, drawn to a dosage, classified in class 206, and subclass 532.

3. The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as apparatus and product made. The inventions in this relationship are distinct if either or both of the following can be shown: (1) that the apparatus as claimed is not an obvious apparatus for making the product and the apparatus can be used for making a materially different product or (2) that the product as claimed can be made by another and materially different apparatus (MPEP § 806.05(g)). In this case the dosage can have an ingestable sheet produced by roller coating.

4. Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required

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because the inventions have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

5. Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions have acquired a separate status in the art due to their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

6. During a telephone conversation with Donald Coulman on 11/03/2006 a provisional election was made with traverse to prosecute the invention of group I, claims 1-43. Affirmation of this election must be made by applicant in replying to this Office action. Claim 44 is withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

7. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

**Double Patenting**

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 1, 6-21, 24-32, 34 and 37-43 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-53 of U.S.

Patent No. 6,702,894. Although the conflicting claims are not identical, they are not patentably distinct from each other because US'894 claims all the claimed limitations in claims 1-53 (instant application having narrowed claimed limitations).

**Claim Rejections - 35 USC § 102**

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) The invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 1 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Percin et al (US 6,474,786). Percin et al discloses (see Figs 1-3 and column 4, lines 43-47) a fluid ejection cartridge (droplet ejector) for dispensing a bioactive fluid (biomedicine, drug) on the surface comprising a first reservoir (12), containing a bioactive fluid; and a first fluid ejector fluidically coupled to the reservoir wherein the ejector is configured to eject essentially in a drop wise manner, at least a drop of bioactive fluid onto the printing surface. Percin et al's device is capable of dispensing bioactive fluid at the claimed volume onto an ingestible sheet.

12. Claims 1 and 6-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Childers (US 2002/0187248).

As to claim 1, Childers discloses (see Figs 1-2, paragraphs 4) a fluid ejection cartridge (16) for dispensing a bioactive fluid (pharmaceutical does in liquid form) on the surface comprising a first reservoir (18), containing a bioactive fluid; and a first fluid ejector (24) fluidically coupled to the reservoir wherein the ejector is configured to eject essentially in a drop wise manner, at least a drop of bioactive fluid onto the printing

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surface (26). Childers's device is capable of dispensing bioactive fluid onto an ingestible sheet.

With respect to claims 6-10, Childers discloses (see Figs 1-2 and paragraph 57) a fluid ejection cartridge further comprising a second reservoir (20) capable of containing a barrier component in proximity to the first reservoir and a second fluid ejector fluidically coupled to the second reservoir for dispensing the second component, information storage element (39) and a controller (12).

### ***Claim Rejections - 35 USC § 103***

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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15. Claims 6-7, 11-14, 16-18, 31-32, 34,37, 38 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Percin et al (US 6,474,786) as applied to claim 1 above and further in view of Lean et al (US 6,079,814).

As to claims 6-7, 11-14, 31, 32, 34, 37, 38 and 43, Percin et al is silent concerning a drop-firing controller for activating the first fluid ejector wherein the first fluid ejector ejects at least one drop of the bioactive fluid onto the first portion of the sheet and a sheet advancer for advancing the sheet wherein the sheet advancer and the drop-firing controller dispense the fluid on a second portion of the sheet. Lean et al discloses (see column 1, lines 20-36, column 3, lines 25-40 and Fig 1-2) a drop-firing controller (printer controller 12) communicating with a plurality of fluid ejection cartridges (printheads 16 having ejectors 42 as an integral unit) and a sheet advancer (input feed rollers 21,22 and a transport belt 14) capable of ejecting fluid onto first and second portions (non-overlapping) of the sheet. It would have been obvious in the art to include a drop-firing controller and a sheet advancer for dispensing fluid onto different portions of the sheet in Percin et al to direct the droplets in the desired direction toward the substrate.

As to claims 16-17, Percin et al discloses two dimensional array droplet ejectors (see Fig 1-3 and Abstract). As to claim 18, Percin et al lacks teaching a sheet tray. Lean et al discloses (see column 3, lines 25-30) input tray for holding at least one sheet. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a sheet tray in Percin et al to feed the sheet onto the sheet transporter so the sheet travels in front of the ejectors.



16. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Percin et al (US 6,474,786) as applied to claim 1 above and further in view of Kneezel et al (US 6,402,280) and Allen (US 5,644,343). Percin et al is silent concerning information storage element storing information about the fluid and the fluid ejector are coupled to a controller. However a fluid ejection system having an information storage element having parameters of the ejected fluid and the ejector that are communicable to a controller is well known in the art to automatically control the quality of the image formed; for instance - Kneezel et al discloses (see Fig 5) printhead (20) having a control system in connection with information storage element (RAM, DATA for one line 130) and controller (128). Allen discloses (see Abstract and Fig 1) an ink jet printhead system having a printhead controller (38) controlling the volume of the droplets ejected from the printer by monitoring the temperature of the ink. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include an information storage element having parameters of the fluid and the ejector in communication with the controller in Percin et al to precisely control the position of the droplet and the size of the printed spot on the substrate.

17. Claims 11-14, 16-19, 20-32, 34, 37-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Childers (US 2002/0187248) in view of Lean et al (US 6,079,814). Childers discloses (see Figs 1-2) a transportable receiving media, a storage device, a display device, an external communication network, a user interface and an

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image acquisition system (see paragraphs 59, 61 and 70). However, a sheet advancer cooperating with a drop-firing controller is not disclosed in Childers. Lean et al discloses (see column 1, lines 20-36, column 3, lines 25-40 and Fig 1-2) a drop-firing controller (printer controller 12) communicating with a plurality of fluid ejection cartridges (printheads 16 having ejectors 42) and a sheet advancer (input feed rollers 21,22 and a transport belt 14) capable of ejecting fluid onto first and second portions (non-overlapping) of the sheet. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a drop-firing controller and a sheet advancer for dispensing fluid onto different portions of the sheet in Childers to direct the droplets in the desired direction toward the substrate.

18. Claims 15 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Percin et al (US 6,474,786) or Childers (US 2002/0187248) in view of Lean et al (US 6,079,814) as applied to claim 11 or 20 above and further in view of Hawkins (US 5,300,968). Percin et al teaches (see column 1, lines 34-37) that printers use bubbles formed by heat pulses to force fluid out of the nozzle and thermal transducers for bulk actuation (see column 4, lines 25-30) Childers and Lean et al (see column 3, lines 41-46) teach the use of thermal printheads, however a heater is not specifically disclosed with the droplet ejector. Hawkins discloses a heater element included in the printhead (see Abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a heater in Percin et al or Childers device to force fluid out of the ejector as an alternative type of ejection system as taught in Lean et al.

19. Claims 19 and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Percin et al (US 6,474,786) or Childers (US 2002/0187248) in view of Lean et al (US 6,079,814) as applied to claim 11 or 20 above and further in view of Purcell et al (US 6,347,857). Percin et al lacks teaching an image acquisition system. Purcell et al discloses (see Fig 3, column 4, lines 1-28) an image acquisition system (a system having an optical detector 22). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include an image acquisition system in Percin et al as modified or Childers to acquire digital image for the purpose of inspection.

20. Claims 8-9, 39, 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Percin et al (US 6,474,786) in view of Lean et al (US 6,079,814) (or Lean et al alone) as applied to claim 1 or 31 above and further in view of William et al (US 6,596,239) or Childers (US 2002/0187248). Percin et al and Lean et al lack teaching a storage device, display device and an external or wireless communication network. However it is well known in the art to use such devices to fully automate the system and for easy access. William et al (see Fig 1 and column 18, lines 23-67) and Childers (see paragraph 70 and Fig 1) disclose storage device, display device, an external or wireless communication network. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the claimed communication devices in Percin et al or Lean et al to easily automate and access the fluid dispensing system.

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The prior art made of record and not relied upon is considered pertinent to applicant's disclosure Hayes teaches (see column 18, lines 52-58) in dispensing mode the volume of a drop within the range of from 100 pico-liters to 1 micro-liter, which is converted to  $10^5$ - $10^{10}$  femto-liter (overlapping the claimed range of from about 10 femto-liter to about ten micro-liter).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yewebdar T. Tadesse whose telephone number is (571) 272-1238. The examiner can normally be reached on Monday-Friday 8:00 AM-4: 30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Fiorilla can be reached on (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

